

effecting a grip between said post member and said latching assembly when said grip means engages said latching surface, and

releasing said grip between said post member and said latching assembly when said grip means engages said releasing surface; and

a moving means for,

moving said latching surface into engagement with said grip means, whereby said grip is effected between said post member and said latching assembly, and

moving said releasing surface into engagement with said grip means, whereby said grip is released between said post member and said latching assembly.

2. (Amended) Apparatus of Claim 1, wherein said latching [releasing] surface defines a smooth surface.
3. (Amended) Apparatus of Claim 1, wherein said latching surface defines a notched surface.
4. (Amended) Apparatus of Claim 3, wherein said notched surface includes, at least, a plurality of teeth.

5. (Amended) Apparatus of Claim 1, wherein said grip means includes, at least, a ball, and wherein said latching means further comprises, an inner shell defining said passage and further defining a radial opening in said inner shell, wherein said ball is located in and radially movable within said radial opening, an outer shell positioned outside said inner shell, wherein said inner shell is axially slidable in a first direction and a second direction with respect to said outer shell, said outer shell including, at least, a tapered portion defining a tapered inner surface adjacent to said ball, and

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a biasing means for biasing said inner shell axially in said first direction such that said ball is biased into engagement with said tapered inner surface, whereby said ball is biasly urged radially inwardly into said passage, wherein said biasing means accommodates movement of said inner shell in said second direction to accommodate radial movement of said ball out of said passage.

Please add the following new claims 6 - 53:

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Apparatus of Claim 3,

wherein said grip means includes, at least, a planar member, and wherein said latching means includes, at least,

a housing member including, at least, an entry element defining said passage for receiving said post member, wherein said passage defines a central entry axis;

at least one latching element movable between an outward orientation and an inward orientation nearer said central entry axis; and

a biasing means extending from said latching element in a direction having a directional component toward an opposite side of said passageway for biasing said latching element toward said central entry axis.

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7. Apparatus of Claim 6, wherein said latching means further includes, at least, an inward positioning means for maintaining a predetermined distance between said latching element and said central entry axis during said inward orientation.

8. Apparatus of Claim 1, wherein said latching surface defines an axially continuous arcuate surface defined by one radius from said elongated axis.

9. Apparatus of Claim 2, wherein said releasing surface is defined by a plurality of radii and further defines, in profile, a straight line.

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10. Latching apparatus comprising:

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a post member defining a central post axis and including, at least, a grip portion defining a maximum grip portion radius and a release portion defining a maximum release portion radius, wherein said maximum grip portion radius is greater than said maximum release portion radius;

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an engagement means for engaging said grip portion of said post member to prevent axial movement of said post member in a first axial direction when said post member is oriented in a first angular orientation relative to said engagement means, and for engaging said release portion of said post member to allow axial movement of said post member in said first axial direction when said post member is oriented in a second angular orientation relative to said engagement means; and
a releasing means for effecting relative axial rotation between said post member and said engagement means.

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11. Apparatus of Claim 10, wherein said grip portion and said release portion extend axially along said post member.
 12. Apparatus of Claim 10, wherein all points on said release portion are located at only one radial distance from said central post axis.
 13. Apparatus of Claim 10, wherein said release portion defines a plurality of release surface points located at more than one radial distance from said central post axis.
 14. Apparatus of Claim 13, wherein said release portion defines, in profile, a straight line.
 15. Apparatus of Claim 10, wherein all points on said grip portion are located at only one radial distance from said central post axis.
 16. Apparatus of Claim 10, wherein said grip portion defines a plurality of release surface points located at more than one radial distance from said central post axis.
 17. Apparatus of Claim 16, wherein said grip portion includes, at least, a notched portion.
 18. Apparatus of Claim 10, wherein said releasing means is connected to said post member and includes, at least, a T-handle with a key-operated cylinder lock.

19. Apparatus of Claim 10, wherein said releasing means includes, at least, a lock assembly abutting an end of said post member.
20. Apparatus of Claim 10, wherein said engagement means includes at least one movable latch element and a biasing means for biasing said movable latch toward engagement with said post member.
21. Apparatus of Claim 20, wherein said biasing means includes, at least, an elastic circular member, and wherein said latch element includes at least one planar surface.
22. Apparatus of Claim 10, wherein said engagement means includes, at least,
a housing member defining a passageway having a central axis for receiving said post member,
a latching element movable between an outward position and an inward position nearer said central axis, and
a biasing means for biasing said latching element toward said central axis of said passageway.
23. Apparatus of Claim 22, wherein said latching element defines a first latching element, and wherein said engagement means further includes, at least, a second latching element, and wherein said biasing means contacts both said first latching element and said second latching element.
24. Apparatus of Claim 22, wherein said latching element is located on one side of said passageway, and wherein said biasing means extends around to an opposite side of said passageway.
25. Apparatus of Claim 24, wherein said latching element is spherical, and wherein said biasing means includes, at least,
an inner cylindrical member defining an aperture for retaining said latching element,
an inclined member rigidly connected to said housing member at a position located between said inner cylindrical member and said housing member, and

a spring means for axially biasing said inner cylindrical member with respect to said housing member.

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~~26.~~ Latching apparatus for releasably latching a first door element, such as a vending machine door, and a second door element, such as a vending machine frame, said apparatus comprising:

a post member defining, at least, a multi-surfaced latching portion, which latching portion includes at least one axially extending notched surface and at least one axially extending smooth surface disposed about the circumference of said post member, wherein said smooth surface defines, in profile, a surface at a plurality of radii from a central axis of said post member;

a latching assembly comprising a passage for accepting said latching portion of said post member therein, and a latch means for effecting a grip on said notched surface when said latching portion of said post member is within said passage, thus resisting removal of said latching portion of said post member from said passage of said latching assembly; and

a releasing means for releasing said grip between said notched surface and said latch means, thus facilitating removal of said latching portion of said post member from said passage of said latching assembly.

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~~27.~~ Apparatus of Claim 26, wherein said smooth surface further defines a flat surface which defines, in profile, a straight line.

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28. Latching apparatus comprising:

a post member defining a central post axis and including, at least,

a grip portion defined by a plurality of grip portion surface points, wherein said plurality of grip portion surface points includes at least one outer grip portion surface point which is located at a first radial distance from said central post axis and is radially displaced from said central post axis at least as far as every other grip portion surface point of said plurality of grip portion surface points, and

a release portion angularly disposed around said post member from said grip portion defined by a plurality of release portion surface points, wherein said plurality of release portion surface points includes at least one outer

release portion surface point which is located at a second radial distance from said central post axis and is radially displaced from said central post axis at least as far as every other release portion surface point of said plurality of release portion surface points,

wherein said first radial distance is greater than said second radial distance; an engagement means for engaging said grip portion of said post member to prevent axial movement of said post member in at least one axial direction when said post member is in a first angular orientation relative to said engagement means, and for engaging said release portion of said post member to allow axial movement of said post member in at least one axial direction when said post member is in a second angular orientation relative to said engagement means; and a releasing means for effecting relative axial rotation between said post member and said engagement means.

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Apparatus of Claim ²⁹~~28~~, wherein said releasing means includes means for rotating said post member.

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Apparatus of Claim ²⁹~~28~~, wherein said grip portion and said release portion extend axially along said post member.

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Apparatus of Claim ²⁹~~28~~, wherein said grip portion includes a plurality of notches and wherein said release portion is smooth.

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Apparatus of Claim ³²~~31~~, wherein each notch of said plurality of notches comprises a radial surface defining a plane parallel to a radial plane of said post member and an inclined surface defining a plane at an acute angle to said radial plane of said post member.

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Apparatus of Claim ²⁹~~28~~, wherein said plurality of release surface points are located at a plurality of radial distances from said central post axis.

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Apparatus of Claim ³⁴~~33~~, wherein said release portion defines, in profile, a straight line.

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Apparatus of Claim ²⁹~~28~~, wherein said plurality of grip surface points are located at one radial distance from said central post axis.

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Apparatus of Claim ~~28~~, wherein said releasing means includes, at least, a T-handle.

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Apparatus of Claim ~~28~~, wherein said releasing means is removably connected to said post member as an axial extension of said post member.

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Apparatus of Claim ~~28~~, wherein said releasing means includes, at least, a lock assembly abutting an end of said post member.

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Apparatus of Claim ~~28~~, wherein said engagement means includes, at least,
a housing member defining a passageway with a central axis for receiving said post member,
a latching element located within said housing member and movable between an outward position and an inward position nearer said central axis, and
a biasing means for biasing said latching element toward said central axis of, said passageway.

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Apparatus of Claim ~~39~~, wherein said biasing means includes, at least, an elastic circular member.

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Apparatus of Claim ~~39~~, wherein said latching element defines a first latching element, and wherein said engagement means further includes, at least, a second latching element, and wherein said biasing means contacts both said first latching element and said second latching element.

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Apparatus of Claim ~~39~~, wherein said latching element is located on one side of said passageway, and wherein said biasing means extends around to an opposite side of said passageway.

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Apparatus of Claim ~~39~~, wherein said biasing means includes, at least, means for constricting around said passageway.

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Apparatus of Claim ~~39~~, wherein said latching element defines a first latching element, wherein said engagement means further includes, at least, a second latching element, and

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wherein said housing member includes, at least, separation means for maintaining separation between said first latching element and said second latching element.

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Apparatus of Claim ⁴⁶~~45~~, wherein said latching element is spherical, and wherein said biasing means includes, at least,

an inner cylindrical member defining an aperture for retaining said latching element,

an inclined member rigidly connected to said housing member at a position located between said inner cylindrical member and said housing member, and a spring means for axially biasing said inner cylindrical member with respect to said housing member.

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46. An engagement apparatus for being connected to a first element for receiving and releasably gripping a post member connected to a second element to form a connection between the first element and the second element, said engagement apparatus comprising:
an entry element defining a passageway with a central axis for receiving a post member;
a latching element movable between an outward position and an inward position nearer said central axis;
a biasing means extending from said latching element in a direction having a directional component toward an opposite side of said passageway for biasing said latching element toward said inward position; and
a mounting means for connecting said engagement apparatus to the first element.

47. Apparatus of Claim 46, wherein said biasing means includes, at least, an elastic circular means for radially biasing said latching element toward said central axis.

48. Apparatus of Claim 46, wherein said biasing means includes, at least, means for constricting around said passageway.

49. Apparatus of Claim 46, wherein said latching element includes, at least, a planar engagement surface.